WORK PLAN & METHODOLOGY

MATERIALS AND METHODS

Research methodology is a systematic and scientific way to solve research problem. The detailed sequential procedure for "Halogenation of Organic Compounds Using New Reagent Systems" will be as follows.

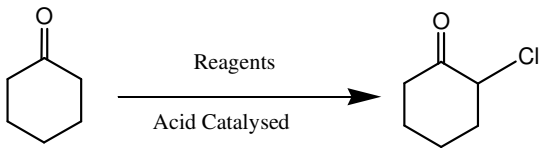
Halogen analysis testing using XRF technology is becoming more and more popular as companies promote their "green" manufacturing processes. In fact, precision XRF Measurement and Analysis equipment is becoming more and more essential for the profitability of manufacturing and process companies worldwide.

A fully automated combustion ion chromatography (CIC) system for the analysis of ionic contaminants, especially halogens, in hard-to-analyze samples such as petrochemicals, viscous or non-aqueous industrial chemicals, and solid samples. These types of samples usually require time- and labor-intensive sample preparation and extractions before analysis. Major applications for CIC automated combustion ion chromatography include analysis of halogens in plastics, polymers, epoxies, lumber, petrochemicals, coal, inks, aluminum powder, polishing agents, lubricating oil, and electronic components. Many countries also regulate the amount of halogens released into the environment. The combustion IC system is ideal for manufacturers that must monitor contamination of chemicals, raw materials, in-process samples, finished products, or waste streams for quality control or environmental regulation compliance.

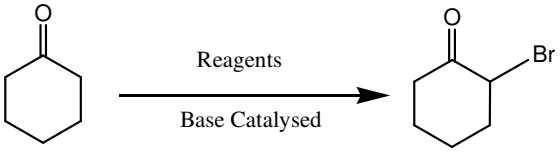
Ion chromatograph with Dionex MFC-1, HPICAG4A,HPIC-AS4A columns, AMMS anion micromembrane suppressor, conductivity detector and integrator and strip chart recorder are also successful equipments for analysis of halogens.

Alpha-halogenation of Ketones and Aldehydes Using New Reagent

1. Acid Catalysed

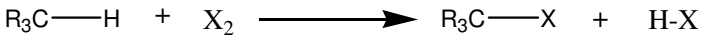


2. Base Promoted

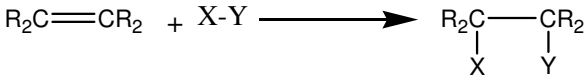


Halogenation of Alkanes & Alkenes

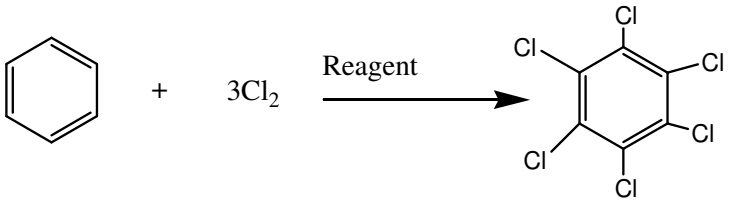
A. Alkanes

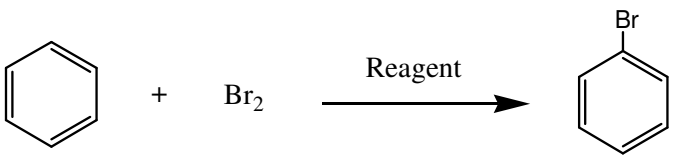


B. Alkene

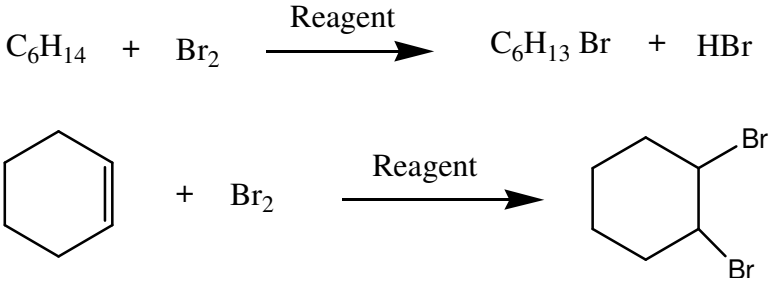


Halogenation of Benzene





Bromination of Hexane



Work Plan: Throughout of this research work the most relevant related work will be implemented in order to serve as objective benchmark towards the new reagent systems and protocol to be devised. The validation will be done based on different analytical and evaluation tools.